STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

March 29, 2007

Mr. Sonny Pierce
President
Pierce Associates, Inc. / Shy Beaver Hatchery
P.O. Box 258
West Buxton, Maine 04093

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0036838
Maine Waste Discharge License (WDL) Application #W008127-5Q-A-N
Final MEPDES Permit/WDL

Dear Mr. Pierce:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL, which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc.

pc: Stuart Rose, DEP
Sandy Lao, USEPA,
File #8127

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
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web site: www.maine.gov/dep

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

PIERCE ASSOCIATES, INC.	)	MAINE POLLUTANT DISCHARGE
SHY BEAVER HATCHERY	)	ELIMINATION SYSTEM PERMIT
HOLLIS, YORK COUNTY, MAINE	)	AND
FISH HATCHERY	)	
#ME0036838	)	WASTE DISCHARGE LICENSE
#W008127-5Q-A-N **APPROVAL**	)	**NEW**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, *et seq.* and Maine law 38 M.R.S.A., Section 414-A *et seq.*, and applicable regulations the Department of Environmental Protection (Department) has considered the application of PIERCE ASSOCIATES, INC./SHY BEAVER HATCHERY (Shy Beaver Hatchery), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

Shy Beaver Hatchery has applied to the Department for a new combination Waste Discharge License (WDL) and Maine Pollutant Discharge Elimination System (MEPDES) permit for the monthly average discharge of up to 1.5 million gallons per day (MGD) of fish hatchery wastewater to Wales Pond Brook, Class B, from a commercial brook trout, rainbow trout, and brown trout hatchery and rearing facility located in Hollis, Maine. The application has been assigned WDL #W008127-5Q-A-N / MEPDES #ME0036838.

PERMIT SUMMARY

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, USEPA extended Maine's NPDES program delegation to all but tribally owned lands. In those areas, the Department maintains the authority to issue WDLs pursuant to Maine law. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From this point forward, the program will be referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program and permit #ME0036838 will be utilized as the primary reference number for the Shy Beaver Hatchery facility.

PERMIT SUMMARY (cont'd)

This permitting action is establishing:

1. A monthly average discharge flow limitation of 1.5 million gallons per day;

2. A daily maximum discharge flow reporting requirement;

3. Monthly average concentration and mass limitations for biochemical oxygen demand (BOD_5) and total suspended solids (TSS) of 6 mg/L and 75 lbs./day, respectively;

4. Daily maximum concentration and mass limitations for BOD_5 and TSS of 10 mg/L and 125 lbs./day, respectively;

5. Seasonal monthly average concentration and mass limits for total phosphorous (total-P);

6. Seasonal daily maximum concentration and mass reporting requirements for total-P;

7. Monthly average and daily maximum concentration and mass monitoring and reporting requirements for orthophosphate (ortho-P) for the period of June 1, 2007 through September 30, 2007;

8. A pH limit range limitation of 6.0-8.5 standard units;

9. A requirement to submit a current facility Operation and Maintenance Plan;

10. Requirements for settling basin cleaning;

11. A requirement to notify the Department in accordance with State salmonid fish health rules and regulations;

12. Requirements related to proper use and record keeping of therapeutic agents; and

13. Seasonal (June – September) ambient water quality monitoring and reporting requirements for Wales Pond Brook.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated March 26, 2007, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department APPROVES the above noted application of PIERCE ASSOCIATES, INC./ SHY BEAVER HATCHERY to discharge a monthly average flow of up to 1.5 million gallons per day of fish hatchery wastewater to Wales Pond Brook, Class B, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. This permit expires five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 29TH DAY OF March, 2007.

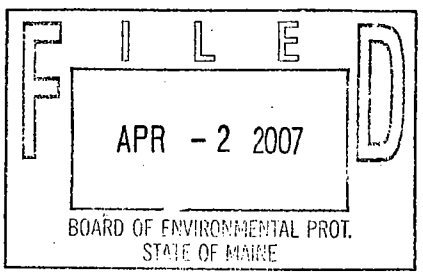
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for

DAVID P. LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: February 20, 2001
Date of application acceptance: February 20, 2001



Date filed with Board of Environmental Protection _____.

This Order prepared by William Hinkel, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **fish hatchery wastewater via Outfall #001A** to Wales Pond Brook. Such discharges shall be limited and monitored by the permittee as specified below [(1)]:

Effluent Characteristic	**Discharge Limitations**				**Minimum Monitoring Requirements**	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	1.5 MGD *[03]*	Report MGD *[03]*	---	---	Daily *[01/01]*	Measured *[MS]*
BOD *[00310]*	75 lbs./day *[26]*	125 lbs./day *[26]*	6 mg/L *[19]*	10 mg/L *[19]*	Twice/Month *[02/30]*	Composite [(2)] *[CP]*
TSS *[00530]*	75 lbs./day *[26]*	125 lbs./day *[26]*	6 mg/L *[19]*	10 mg/L *[19]*	Twice/Month *[02/30]*	Composite [(2)] *[CP]*
Total Phosphorus [(3)] *[00665]* **June 1 – September 30 each year**	0.93 lbs./day *[26]*	Report lbs./day *[26]*	0.074 mg/L *[19]*	Report mg/L *[19]*	Twice/Month *[02/30]*	Composite [(2)] *[CP]*
Orthophosphate [(4)] **June 1, 2007 – September 30, 2007** *[04175]*	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	Twice/Month *[02/30]*	Composite [(2)] *[CP]*
pH *[00400]*	---	---	---	6.0-8.5 S.U. [(5)] *[12]*	Twice/Month *[02/30]*	Grab *[GR]*

The italicized numeric values bracketed in the table above and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs).

FOOTNOTES: See pages 6 and 7 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

2. The permittee shall conduct **ambient dissolved oxygen and temperature monitoring in Wales Pond Brook** [(6)] as specified below during the period of June 1 through September 30 of each year. This permitting action is establishing an Outfall identifier of #001B for Permit Compliance System tracking purposes.

Monitoring Parameter	Reporting Requirement			Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Daily Minimum as specified	Measurement Frequency as specified	Sample Type as specified
Dissolved Oxygen *[00300]*	Report mg/L *[19]*	Report mg/L *[19]*	Report mg/L *[19]*	1/Week *[01/07]*	Measured *[MS]*
Water Temperature *[00010]*	Report Degrees Celsius *[04]*	Report Degrees Celsius *[04]*	Report Degrees Celsius *[04]*	1/Week *[01/07]*	Measured *[MS]*
Time of Day *[80273]*	---	---	Report 24-hour time *[1Q]*	1/Week *[01/07]*	Measured *[MS]*

The italicized numeric values bracketed in the table above and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs).

FOOTNOTES: See pages 6 and 7 of this permit for applicable footnotes.

FOOTNOTES:

1. **Sampling** – Sampling and analysis must be conducted in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

   All detectable analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the detection limit achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. For mass, if the analytical result is reported as <Y or if a detectable result is less than a RL, report a <X lbs/day, where X is the parameter specific limitation established in the permit.

2. **Composite Sample** – Composite sample means a sample consisting of a minimum of four grab samples collected at two-hour intervals during the working day at the facility. Alternatively, upon Department approval, the permittee may elect to use an automatic compositor for sampling.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

3. **Total Phosphorous** – All total phosphorus monitoring conducted by the permittee for compliance with this permit shall be performed in accordance with Attachment A of this permit, *Protocol For Total P Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits, Finalized May 2006*, unless otherwise specified by the Department.

4. **Orthophosphate** – The permittee shall conduct effluent monitoring for orthophosphate (ortho-P) during the period of June 1, 2007 through September 30, 2007 only. The Department reserves the right to require additional influent monitoring for ortho-P based on the results of initial monitoring. Ortho-P monitoring conducted by the permittee for compliance with this permit shall be performed in accordance with Attachment B of this permit, *Protocol For Orthophosphate Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits, Finalized May 2006*, unless otherwise specified by the Department.

5. **pH Range Limitation** – The pH value of the effluent shall not be lower than 6.0 SU nor higher than 8.5 SU at any time unless these limitations are exceeded due to natural causes. The permittee shall provide oral notification of any exceedence within 24 hours from the time the permittee becomes aware of the circumstances and shall submit a written explanation of the exceedence within 5 days of the time the permittee becomes aware of the circumstances.

6. **Ambient Water Quality Monitoring** – The permittee shall conduct ambient water quality monitoring in Wales Pond Brook at two locations during the period of June 1 through September 30 of each year. The two locations are: (1) immediately above the earthen and wooded dam on the impounded portion of Wales Pond Brook; and (2) at a location approximately 100 feet downstream of the Parshall flume installed in the Wales Pond Brook representing free-flowing conditions following the combination and mixing of the two stream channels exiting the impounded portion of the brook. The Department reserves the right to modify the monitoring locations, as necessary, during the term of this permit. See Special Condition L of this permit, *Ambient Dissolved Oxygen and Temperature Monitoring*, of this permit for submission requirements and sampling specifications.

SPECIAL CONDITIONS

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit, the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5) (*Bypass*) of this permit.

D. NOTIFICATION REQUIREMENTS

In accordance with Standard Condition D, the permittee shall notify the Department of the following:

1. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system.

2. For the purposes of this section, adequate notice shall include information on:

   a. The quality or quantity of wastewater introduced to the waste water collection and treatment system; and

   b. Any anticipated impact of the change in the quantity or quality of the wastewater to be discharged from the treatment system.

SPECIAL CONDITIONS

E. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to a Department regional office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department's assigned compliance inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection
Southern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
312 Canco Road
Portland, Maine 04103

F. OPERATION & MAINTENANCE (O&M) PLAN

On or before May 15, 2007, the permittee shall submit to the Department a current written comprehensive Operation & Maintenance (O&M) Plan ***[PCS Code 09699].*** The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

The O&M Plan shall establish Best Management Practices (BMP) to be followed in operating the facility, cleaning the raceways/culture tanks, screens, and other equipment and disposing of any solid waste. The purpose of the BMP portion of the plan is to identify and to describe the practices which minimize the amounts of pollutants discharged to surface waters. Among other items, the plan shall describe in detail efficient feed management and feeding strategies to minimize discharges of uneaten feed and waste products, how and when the accumulated solids are to be removed, dewatered, and methods of disposal. The plan shall also describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any onsite storage. The plan shall document the recipients and methods of any offsite waste disposal.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and USEPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

SPECIAL CONDITIONS

G. SETTLING BASIN CLEANING

All wastewater settling structures shall be cleaned when accumulated materials occupy 20% of a basin's capacity, when material deposition in any area of the basins exceeds 50% of the operational depth, or at any time that said materials in or from the basins are contributing to a violation of permit effluent limits.

H. DISEASE AND PATHOGEN CONTROL NOTIFICATION

The permittee must comply with Maine Department of Inland Fisheries and Wildlife and Maine Department of Marine Resources salmonid fish health rules (12 M.R.S.A., §6071; 12 M.R.S.A., §§7011, 7035, 7201, and 7202, or revised rules). The cited rules include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In the event of a catastrophic pathogen occurrence, the permittee shall submit to the Department for review, information on the proposed treatment including materials/chemicals to be used, material/chemical toxicity to aquatic life, the mass and concentrations of materials/chemicals as administered, and the concentrations to be expected in the effluent. The Department will address such occurrences through administrative modifications of the permit.

I. DISINFECTING/SANITIZING AGENTS

The permittee neither applied for nor does this permit authorize the discharge of waste waters that have been treated with disinfectants and/or sanitizing agents.

J. THERAPEUTIC AGENTS

All medicated fish feeds, drugs, and other fish health therapeutants shall be registered with USEPA as appropriate, approved by the US Food and Drug Administration (USFDA), and applied according to USFDA accepted guidelines and manufacturer's label instructions. Records of all such materials used are to be maintained at the facility for a period of five years. This permitting action does not authorize routine off-label or extra-label drug use. Such uses shall only be permitted in emergency situations when they are the only feasible treatments available and only under the authority of a veterinarian. **The permittee shall notify the Department in writing within 24-hours prior to such use.** This notification must be provided by the veterinarian involved and must include the agent(s) used, the concentration and mass applied, a description of how the use constitutes off-label or extra-label use, the necessity for the use in terms of the condition to be treated and the inability to utilize accepted drugs or approved methods, the duration of the use, the likely need of repeat treatments, and information on aquatic toxicity. If, upon review of information regarding the use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use.

SPECIAL CONDITIONS

K. MACROINVERTEBRATE BIOMONITORING

Upon notification by the Department, the permittee shall submit to the Department, for review and approval, a macroinvertebrate biomonitoring plan for Wales Pond Brook. The plan shall be consistent with "*Methods for Biological Sampling and Analysis of Maine's Rivers and Streams*" (DEP #LW0387-B2002, August 2002) and shall include a scope of work and schedule, monitoring locations and maps, methods and materials, and reporting procedures for the biomonitoring program. Biomonitoring shall be conducted according to a Department approved monitoring plan.

On or before December 15 of each year, the permittee shall compile monitoring results in a biomonitoring report and submit to the Department's assigned compliance inspector, as directed in Special Condition E of this permit.

It is noted that the permittee is only required to fulfill this monitoring obligation if notified by the Department that biomonitoring effort(s) conducted by or for the Department indicate continued non-attainment of Class B standards for Wales Pond Brook. If the permittee is required to initiate biomonitoring, and the receiving water is determined by the Department to be meeting criteria, standards, and designated uses for its assigned water quality classification, the Department may reopen this permit in accordance with Special Condition M of this permit, *Reopening of Permit*, to modify or discontinue the biomonitoring requirement.

L. AMBIENT DISSOLVED OXYGEN AND TEMPERATURE MONITORING

The permittee shall monitor ambient dissolved oxygen and temperature (Celsius) from June 1 through September 30 each year beginning the effective date of this permit at a frequency of once per week and shall report the time of day the monitoring is conducted.

The permittee shall report all monitoring results to the Department in a supplemental report accompanying the appropriate monthly discharge monitoring report.

Monitoring shall be conducted between the hours of 5:00 a.m. and 9:00 a.m. and again between 1:00 p.m. and 4:00 p.m. to ensure monitoring is representative of diurnal changes in dissolved oxygen levels. Monitoring shall be conducted at two locations: (1) immediately above the earthen and wooded dam on the impounded portion of Wales Pond Brook; and (2) at a location approximately 100 feet downstream of the Parshall flume installed in Wales Pond Brook representing free-flowing conditions following the combination and mixing of the two stream channels exiting the impounded portion of the brook.

On or before May 15, 2007, the permittee shall submit a plan for ambient dissolved oxygen and temperature monitoring and instrument calibration/data quality control to the Department assigned facility inspector (using the contact information in Special Condition E of this permit), who will forward to the Department's Division of Environmental Assessment for review and approval ***[PCS Code 00201]***. The plan shall include a scope of work and schedule, monitoring locations and maps, sampling methods and materials, and reporting procedures for the ambient dissolved oxygen and temperature monitoring program. The plan shall also include procedures for regular

SPECIAL CONDITIONS

L. AMBIENT DISSOLVED OXYGEN AND TEMPERATURE MONITORING (cont'd)

instrument calibration to ensure data quality control. Ambient dissolved oxygen and temperature monitoring shall be conducted according to a Department approved monitoring plan.

Beginning June 2007 and lasting through permit expiration, the permittee shall execute the approved ambient dissolved oxygen and temperature monitoring plan.

M. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, new water quality monitoring data or modeling information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to; (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded, (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

N. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

Protocol for Total Phosphorus
Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits

Approved Analytical Methods: EPA 365.2, SM 4500-P B.5 E

Sample Collection: The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples, unless a facility's Permit specifically designates grab sampling for this parameter. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved by the addition of 2 mls of concentrated H_2SO_4 per liter and refrigerated at 0-4 degrees C. The holding time for a preserved sample is 28 days.

Note: Ideally, Total P samples are preserved as described above. However, if a facility is using a commercial laboratory then that laboratory may choose to add acid to the sample once it arrives at the laboratory. The Maine DEP will accept results that use either of these preservation methods.

QA/QC: Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

Finalized May 2006

ATTACHMENT B

Protocol for Orthophosphate
Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits

Approved Analytical Methods: EPA 365.2, SM 4500-P.E

Sample Collection: The Maine DEP is requesting that orthophosphate analysis be conducted on composite effluent samples unless a facility's Permit specifically indicates grab sampling for this parameter. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. The sample must be filtered immediately (within 15 minutes) after collection using a pre-washed 0.45-um membrane filter. Be sure to follow one of the pre-washing procedures described in the approved methods. Also, be aware that you will likely want to use a designated suction hose and collection container for the orthophosphate filtering process. If the sample is being sent to a commercial laboratory or analysis cannot be performed within 2 hours after collection then the sample must be kept at 0-4 degrees C. There is a 48-hour holding time for this sample although analysis should be done sooner, if possible.

QA/QC: Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

Finalized May 2006

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **MARCH 26, 2007**

MEPDES PERMIT NUMBER: **#ME0036838**
WASTE DISCHARGE LICENSE: **#W008127-5Q-A-N**

NAME AND ADDRESS OF APPLICANT:

PIERCE ASSOCIATES, INC./SHY BEAVER HATCHERY
P.O. BOX 258
WEST BUXTON, MAINE 04093

COUNTY: **YORK**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

SHY BEAVER HATCHERY
161 SHY BEAVER ROAD
HOLLIS, MAINE 04093

RECEIVING WATER / CLASSIFICATION: **WALES POND/CLASS GPA**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MR. SONNY PIERCE**
PRESIDENT
PIERCE ASSOCIATES, INC.
(207) 229-3003

1. APPLICATION SUMMARY

Application: Pierce Associates, Inc./Shy Beaver Hatchery (Shy Beaver Hatchery) has applied to the Department of Environmental Protection (Department) for a new combination Waste Discharge License (WDL) and Maine Pollutant Discharge Elimination System (MEPDES) permit for the monthly average discharge of up to 1.5 million gallons per day (MGD) of fish hatchery wastewater to Wales Pond Brook, Class B, from a commercial brook trout, rainbow trout, and brown trout hatchery and rearing facility located in Hollis, Maine. The application has been assigned WDL #W008127-5Q-A-N/MEPDES #ME0036838.

2. PERMIT SUMMARY

a. Regulatory – On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, USEPA extended Maine's NPDES program delegation to all but tribally owned lands. In those areas, the Department maintains the authority to issue WDLs pursuant to Maine law. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From this point forward, the program will be referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program and permit #ME0036838 will be utilized as the primary reference number for the Shy Beaver Hatchery facility.

b. Terms and Conditions – This permitting action is establishing:

1. A monthly average discharge flow limitation of 1.5 million gallons per day;
2. A daily maximum discharge flow reporting requirement;
3. Monthly average concentration and mass limitations for biochemical oxygen demand (BOD_5) and total suspended solids (TSS) of 6 mg/L and 75 lbs./day, respectively;
4. Daily maximum concentration and mass limitations for BOD_5 and TSS of 10 mg/L and 125 lbs./day, respectively;
5. Seasonal monthly average concentration and mass limits for total phosphorous (total-P);
6. Seasonal daily maximum concentration and mass reporting requirements for total-P;
7. Seasonal monthly average and daily maximum concentration and mass reporting requirements for orthophosphate for the period of June 1, 2007 through September 30, 2007;
8. A pH limit range limitation of 6.0-8.5 standard units;
9. A requirement to submit a current facility Operation and Maintenance Plan;
10. Requirements for settling basin cleaning;
11. A requirement to notify the Department in accordance with State salmonid fish health rules and regulations;
12. Requirements related to proper use and record keeping of therapeutic agents; and
13. Seasonal (June – September) ambient water quality monitoring and reporting requirements for Wales Pond Brook.

2. PERMIT SUMMARY (cont'd)

c. History – This section provides a summary of significant licensing, permitting, and other events affecting the Shy Beaver Hatchery.

December 20, 2000 – The Department notified Pierce Associates, Inc. of the need to apply to the Department for a Waste Discharge License for the discharge of fish hatchery wastewater.

February 20, 2001 – Pierce Associates, Inc./Shy Beaver Hatchery submitted a General Application to the Department for a new WDL. The application was accepted for processing on February 20, 2001 and was assigned WDL #W008127-5Q-A-N.

d. Source Description/ Facility Operation: Shy Beaver Hatchery is a commercial fish hatchery located in Hollis, Maine, and was first established in the 1870s. See Attachment A of this Fact Sheet for a map created by the Department showing the location of the facility, and Attachment B for a schematic of the facility. Shy Beaver raises brook trout, rainbow trout, brown trout, and artic char, and obtains eyed eggs from a certified Connecticut state hatchery. Shy Beaver Hatchery raises approximately 15,000 fish per year for private pond stocking and approximately 15,000 fish per year for bioassays. All fish obtained are fall spawners, however depending on bioassay needs, Shy Beaver Hatchery can obtain eggs from other sources that are manipulated to spawn at any time of the year.

Shy Beaver is a flow-through facility, obtaining source water from natural springs and from two wells of depths of 60 feet and 30 feet deep, respectively. During high flow times (winter, storms, etc.) the water flow-through rate is approximately 1,500 gallons per minute (gpm) (2.16 million gallons per day, mgd), while during drought conditions (summer) it is approximately 800 gpm (1.15 mgd). Shy Beaver has an influent emergency bypass to route excess influent flows, if necessary, directly to Wales Pond Brook. Biomass on station is highest from April through June. Biomass is lowest in the summer as the raceways are mostly empty following stocking.

Hatchery / Rearing: The hatchery operation consists of three stacks of eight incubator trays for a total of 24 trays. The hatchery/rearing facility utilizes well water as its source water. Shy Beaver typically isolates the fish to one species per stack. Eggs/fish are kept in the incubator trays through hatching until the fish reach the swim-up stage. Then, they are transferred to twenty-four aluminum troughs that are 10-feet long by 1-foot wide by 8-inches deep. There is no water reuse between individual egg tray stacks or between troughs; all are set up as parallel flow pass-through systems.

Fish are kept in the troughs until they reach approximately 2-3 inches in length, which first occurs for the rainbow trout between January and March and slightly later for other species raised. Fish are then transferred to circular tanks located outside.

2. PERMIT SUMMARY (cont'd)

Outside Tanks: Outside tanks utilize well water as the source water. The tanks consist of eleven 8-foot diameter by 20-inch deep (approximately 627-gallon) tanks and four 15-foot diameter by 32-inch deep (approximately 8,378-gallons) tanks. The 8-foot tanks are made of fiberglass, while the 15-foot tanks are made of corrugated steel with a concrete floor. All circular tanks have center drains for cleaning. There is no water reuse between individual circular tanks; all are set up as parallel flow pass-through systems. Fish are held in the outside tanks until they reach approximately 6-inches in length. Fish are then transferred to outside raceways.

Raceways: The raceways utilize a combination of well water and spring water as the source water. One raceway is located above the hatchery and is 12-feet wide by 70-feet long by 16-inches deep. Other raceways are located below the hatchery and are 14-feet wide by 150-feet long by 16-inches deep. Water flow from the hatchery/rearing and outside tank portions of the facility enters the raceway portion and subsequently flows through the remainder of the facility in series flow. All raceways are earthen with wooden sides and are covered with screen to discourage predators. Fish attain a size of approximately 8-10-inches in length in the raceways.

In Attachment 5 of Shy Beaver's 2/26/01 General Application, the applicant stated that formalin and an iodine solution are used for disinfection. However, Shy Beaver has since informed the Department that the facility does not use chemicals of any kind to ensure the fish may be used for bioassays. This permit does not authorize the use of disinfectants at this facility that may carry over to the effluent. Shy Beaver has fish escape prevention screens in place. Shy Beaver stocks several hundred fish per week in Wales Pond Brook for a private fishing club. Shy Beaver typically sells or stocks all fish each year. A minimal number of hold-over fish may be retained for the private fishing club.

e. Wastewater: Shy Beaver stated that it vacuums fish containment structures as needed with a pool vacuum. Extracted solid waste materials are deposited on the ground surface in various areas of the facility's 250-acre property. Water extracted during vacuuming is returned to the facility flow. Shy Beaver reports that raceways are typically cleaned twice per year. When tanks are emptied of fish, they are cleaned by pressure washing. As described above, all facility flow-through water is combined in the raceway portion of the facility.

Based on electronic mail sent to the Department by Shy Beaver on October 3, 2006, the facility has taken the final production pool out of production for use as a settling basin. Wastewater flows from this structure to the impounded headwaters of Wales Pond Brook, which is a tributary to the Saco River.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

The impounded headwaters of Wales Pond Brook, which is referred to as Wales Pond, and the brook itself are "waters of the State" as defined by Maine law, 38 M.R.S.A. §361-A sub-section 7. Maine law, 38 M.R.S.A. §467 sub-section 12.B. classifies tributaries of the Saco River, unless otherwise classified, which includes Wales Pond Brook at the point of discharge, as Class B waters. Maine law 38 M.R.S.A. §465 sub-section 3 describes the standards of classification for Class B waters as follows:

A. Class B waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as unimpaired.

B. The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between May 15th and September 30th, the number of *Escherichia coli* bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 236 per 100 milliliters.

C. Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report lists Wales Pond Brook as "Category 5-A: Rivers and Steams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)." Impairment in this context refers to the impairment of the aquatic life standard for Class B waters. Benthic macroinvertebrate samples were collected between calendar years 2000 through 2005. The "Upstream" station sampled is located approximately 110 meters below the impounded headwaters of the brook, commonly referred to as Wales Pond, while the "Downstream" station is located approximately 900 meters below the impounded headwaters of the brook. The "Upstream" station sampled in 2005 was in non-attainment of the minimum Class C aquatic life standard. There has been very little variability in the sampling results. The "Upstream" station has never attained the Class B aquatic life standard but has fluctuated between the minimum Class C aquatic life standard (2001, 2003, 2004) or non-attainment (2000, 2002, 2005). The "Downstream" station met the Class B aquatic life standard in 2000, 2001, 2003, and 2005 and the Class C aquatic life standard in 2002 and 2004.

The Department has identified the discharge from Shy Beaver Hatchery as a potential source for the non-attainment status of the brook. Application of appropriate pollution control technologies to the discharge from Shy Beaver Hatchery, as required by this permitting action and as further discussed in Section 6 of this Fact Sheet, is anticipated to result in improvement of receiving water quality and, ultimately, attainment of all standards of classification for Class B waters.

A chlorophyll-a level in the range of 8 to 12 ug/l is currently being used by the Department as the threshold level indicating the occurrence of an algae bloom. When chlorophyll-a levels approach this threshold, the water may begin to appear green tainted from plankton that are floating in the water. The plankton may also be visible within the water column. Based on Department research, an in-stream concentration of 0.035 mg/L corresponds to the maximum level at which algae blooms will not typically occur in a receiving river or stream under normal circumstances.

Based on aerial (from fixed wing aircraft on June 16, 2006) and ground observations (July 6, 2006) conducted by Department staff, the Department has documented the occurrence of heavy algae growth in Wales Pond Brook in and below the impoundment. Analytical test results for two water samples collected from Wales Pond Brook by Department staff on July 6, 2006 for total phosphorous were 25 parts per billion (ppb) and 34 ppb and chlorophyll-a results were 6.9 ppb and 14 ppb. Analytical test results for water samples collected from the impounded portion of the brook by the Department in calendar years 2000, and 2005 for total phosphorous were 34 ppb and 43 ppb, respectively. Analytical test results for chlorophyll-a were 3.1 ppb, 11.0 ppb, and 16.0 ppb, respectively for years 1999, 2000, and 2005. On August 24, 2005 and August 25, 2005, the Department measured dissolved oxygen (DO) in the impounded portion of the brook. On 8/25/05, the DO measurement at a depth of 2 meters was 5.3 parts per million (ppm), which is below the minimum DO standard of 7 ppm for Class B waters. Dissolved oxygen measurements (n = 5) conducted by Department staff in free-flowing portions of Wales Pond Brook at approximately 1:30 p.m. on July 6, 2006 ranged from

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

13.1 ppm to 13.6 ppm. These results are consistent with expectations for DO levels occurring in a nutrient-rich receiving water at mid-afternoon as aquatic plants are producing oxygen in during photosynthesis.

Based on these observations, test results, and monitoring results, the Department is making a best professional judgment determination in this permitting action that Wales Pond Brook is not attaining the designated use of "recreation in and on the water" for Class B waters due to the heavy algae growth. This determination is supported by the ambient water quality data, which indicate phosphorous and chlorophyll-a levels have been documented above the thresholds indicating algae blooms may occur.

No effluent data are available to characterize the discharge from Shy Beaver Hatchery, which is the only point source discharge to the receiving waters. Therefore, the Department is making a best professional judgment determination in this permitting action that the previously unregulated discharge from the Shy Beaver Hatchery has caused or contributed to non-attainment of the standards of classification ascribed to Wales Pond Brook. Application of appropriate pollution control technologies to the discharge from Shy Beaver Hatchery, as required by this permitting action and as further discussed in Section 6 of this Fact Sheet, is anticipated to result in improvement of receiving water quality and, ultimately, attainment of all standards of classification for Class B waters.

The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report lists all freshwaters in Maine as *"Category 4-B-3: Waters Impaired by Atmospheric Deposition of Mercury. Regional or National TMDL may be Required."* Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, *"the impairment is presumed to be from atmospheric contamination and deposition. The advisory is based on probability data that a stream, river, or lake may contain some fish that exceed the advisory action level. Any freshwater may contain both contaminated and uncontaminated fish depending on size, age and species occurrence in that water."*

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Applicability of National Effluent Guidelines: On June 30, 2004, USEPA finalized the Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (National Effluent Guidelines). The earlier September 12, 2002 proposed National Effluent Guidelines (NEGs) and subsequent working draft NEGs established numerical limitations for the discharge of total suspended solids (TSS) and requirements for facilities to develop and implement best management practices (BMP) plans for control of other pollutants.

In the final NEGs, EPA expressed effluent limitations in the form of narrative standards, rather than as numerical values. The final NEGs require facilities to develop and implement BMPs regarding operation and maintenance of the facility, as does this permitting action.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

b. Flow: This permitting action is establishing a monthly average discharge flow limitation of 1.5 MGD, based on information provided in the permittee's General Application for Waste Discharge License and facility operations and design capacity, and a daily maximum discharge flow reporting requirement. This permitting action is establishing a daily, measured discharge flow monitoring requirement consistent with Department guidelines for wastewater treatment facility discharges.

c. Dilution Factors: The chronic dilution factor associated with this facility was derived in accordance with Department rule, 06-096 CMR, Chapter 530 Section 4.A *Surface Water Toxics Control Program* and were calculated as follows.

$$\text{Chronic: } 7Q10 = 2.5 \text{ cfs} \quad \Rightarrow \frac{(2.5 \text{ cfs})(0.6464) + (1.5 \text{ MGD})}{(1.5 \text{ MGD})} = 2.1{:}1$$

d. Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS): According to EPA's final NEGs, effluent from fish hatcheries and rearing facilities can contain *"...high concentrations of suspended solids and nutrients, high BOD and low dissolved oxygen levels. Organic matter is discharged primarily from feces and uneaten feed."* As stated in the 2002 proposed NEGs, "*elevated levels of organic compounds contribute to eutrophication and oxygen depletion.*" This is expressed as BOD *"...because oxygen is consumed when microorganisms decompose organic matter."* *"The greater the BOD, the greater the degree of pollution and the less oxygen available."* The discharge of high BOD wastewater to small receiving waters with insufficient dilutions can result in formation of oxygen deficient areas known as sag points. Oxygen sag points represent both localized impacts to habitat and aquatic life as well as barriers to migration throughout the receiving water. Based on this premises and a long standing practice of regulating effluent BOD, the Department considers BOD a significant pollutant and therefore is establishing effluent limitations and monitoring requirements for this parameter in this permitting action.

The results of dissolved oxygen profile sampling conducted within the impounded portion of Wales Pond Brook on August 25, 2005 indicates non-attainment of Class B DO standards. The Department concludes that additional ambient DO data is necessary to determine the DO attainment status for the receiving water. Special Condition L of this permit requires the permittee to conduct dissolved oxygen and temperature monitoring at a minimum frequency of once per week during the months of June, July, August, and September of each year. The Department will evaluate the results of monitoring at the end of the first 12-month period following issuance of this permit to identify whether the technology-based limits are protective of receiving water quality. The Department reserves the right to reopen this permit in accordance with Special Condition M to establish water quality-based effluent limits for BOD_5 if necessary to protect receiving water quality.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Given the lack of ambient dissolved oxygen data and facility effluent data, and in consideration that the discharge from Shy Beaver Hatchery has not previously been regulated, the Department is making a best professional judgment determination in this permitting action that establishing technology-based effluent limitations for BOD_5 and TSS will result in a reduction in loading over historical levels and that limiting the discharge in this manner will not cause or contribute to non-attainment of Class B standards.

This permitting action is establishing monthly average and daily maximum effluent concentration limitations of 6 mg/L and 10 mg/L, respectively, for BOD_5 and TSS based on a Department best professional judgment (BPJ) determination of best practicable treatment (BPT) for the discharge of fish hatchery wastewater from fish hatchery facilities. Department rule 06-096 CMR Chapter 523 subsection 6 f states that all pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass. With a monthly average discharge flow limit of 1.5 MGD, this permitting action is establishing monthly average and daily maximum technology-based mass limits for BOD_5 and TSS as follows:

Monthly Average Mass Limit: (6 mg/L)(8.34 lbs./gallon)(1.5 MGD) = 75 lbs./day
Daily Maximum Mass Limit: (10 mg/L)(8.34 lbs./day)(1.5 MGD) = 125 lbs./day

The discharge from the Shy Beaver Hatchery has not previously been licensed and the facility has not conducted effluent monitoring to date. Therefore, the Department cannot relate the facility's demonstrated performance to the new concentration limitations for BOD_5 and TSS. The Department reserves the right to reopen this permit, with notice to the permittee, in accordance with Special Condition M of this permit to revise effluent limits for BOD_5 and TSS based on statistical evaluations of demonstrated performance of consistently and properly utilized treatment technology for the industry.

This permitting action is establishing a minimum monitoring frequency requirement of twice per month and a composite sample type for BOD_5 and TSS based on a Department best professional judgment determination of the minimum monitoring necessary to accurately characterize the effluent and in consideration of receiving water quality conditions.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

e. Total Phosphorus and Orthophosphate: Phosphorus is a nutrient that encourages the growth of plants such as planktonic algae and macrophytes in northern waters. Oxygen levels in the water are reduced in the early morning hours due to extended nighttime respiration of algae. The decomposition of excess plant material further reduces the amount of available oxygen in the water through biochemical oxygen demand. Lowering oxygen levels in a receiving water impacts the aquatic life in that water, making it unfit for some forms of life. Further, enrichment from excess nutrients, such as phosphorus, can result in reductions in aquatic macro-invertebrate species diversity, an indicator of the overall health of a receiving water. Excess phosphorus can also result in undesirable aesthetic conditions in a receiving water, impacting that water's ability to meet standards for maintaining recreational use, a designated use by law. Therefore, any increase in the phosphorus content in a receiving water has the potential to cause or contribute to non-attainment of classification standards. Orthophosphate (ortho-P) is the portion of total phosphorous (total-P) that is readily available for uptake by aquatic plants. It is important to be able to characterize the facility effluent in terms of the relationship between ortho-P and total-P in order to better understand the effects on the receiving water.

For discharges to rivers and streams, the Department typically utilizes an in-stream total phosphorus concentration threshold of 0.035 mg/L (35 parts per billion, µg/L) and the dilution provided by a receiving water to calculate water quality-based effluent limits. At this time, the Department has not adopted nutrient criteria for phosphorous. Based on Department research, an in-stream concentration of 0.035 mg/L corresponds to the maximum level at which algae blooms will not typically occur in a receiving river or stream under normal circumstances. The Department has insufficient ambient water quality data at this time to determine site-specific phosphorous criteria for Wales Pond Brook.

Phosphorus is typically of concern under chronic (7Q10 stream design flow) conditions during the summer months. With a chronic dilution factor of 2.1:1 and a monthly average discharge flow limit of 1.5 MGD, seasonal (June 1 through September 30 of each year) monthly average water quality-based concentration and mass limits for total phosphorous were derived as follows:

Monthly Average Concentration = (ambient water quality criterion)(chronic dilution)
= (0.035 mg/L)(2.1) = 0.074 mg/L

Monthly Average Mass = (monthly average concentration)(conversion factor)(discharge flow limit)
= (0.074 mg/L)(8.34 lbs./gallon)(1.5 MGD) = 0.93 lbs./day

This permitting action is establishing monthly average and daily maximum concentration and mass reporting requirements for **orthophosphate (ortho-P) during the period of June 1, 2007 through September 30, 2007** in order to determine the relationship between ortho-P to total-P in the discharge.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

This permitting action is establishing a minimum monitoring frequency requirement of twice per month and a composite sample type for total-P and ortho-P based on a Department best professional judgment of the minimum monitoring and sample type necessary to accurately characterize the discharge from this facility.

f. pH: This permitting action is establishing a pH range limitation of 6.0-8.5 standard units. The pH value of the effluent shall not be lower than 6.0 SU nor higher than 8.5 SU at any time unless these limitations are exceeded due to natural causes. The permittee shall provide oral notification of any exceedence within 24 hours from the time the permittee becomes aware of the circumstances and shall submit a written explanation of the exceedence within 5 days of the time the permittee becomes aware of the circumstances. This permitting action is establishing a minimum monitoring frequency requirement twice per month for pH based on the Department's BPJ of monitoring frequencies necessary to more accurately characterize facility effluent conditions.

7. SETTLING BASIN CLEANING

Discharge of inadequately treated fish hatchery wastewater (excess feed and fish waste) contributes solids, BOD, and nutrients to receiving waters which can contribute to eutrophication and oxygen depletion. This, in combination with other pollutant-specific toxic effects, impacts the aquatic life and habitat value in the receiving water. Typical hatchery wastewater treatment practices include effluent filtration and settling with solids removal. Special Condition G of this permit establishes a requirement that any settling structures be cleaned when accumulated materials occupy 20% of a basin's capacity, when material deposition in any area of the basins exceeds 50% of the operational depth, or at any time that said materials in or from the basins are contributing to a violation of permit effluent limits.

8. DISEASE AND PATHOGEN CONTROL AND REPORTING

Maine Department of Inland Fisheries and Wildlife (MDIFW) Rules (Chapter 2.03-A) and Maine Department of Marine Resources (MeDMR) Rules (Chapter 24.21) state that *"the transfer and/or introduction of organisms fall within the jurisdiction of the Department of Marine Resources (12 MRSA, §6071) into coastal waters within the State of Maine and the Department of Inland Fisheries and Wildlife (12 MRSA, §§7011, 7035 and 7201, 7202) into public and/or private waters within the State of Maine. These rules are intended to protect wild and farmed salmonid fish populations and shall be applicable to all individuals involved in the culture and movement of live salmonids and gametes."* Further, both agencies' rules define Diseases of Regulatory Concern as *"...infectious agents that have been demonstrated to cause a significant increase in the risk of mortality among salmonid populations in the State of Maine. Diseases of Regulatory Concern are classified by the Commissioner into three (3) disease categories: exotic, endemic (limited distribution) and endemic based on an*

8. DISEASE AND PATHOGEN CONTROL AND REPORTING (cont'd)

annual review and analysis of epidemiological data." In this permitting action, as a salmonid aquaculture facility, Shy Beaver Hatchery must comply with MDIFW and MeDMR salmonid fish health rules (12 MRSA, §6071; 12 MRSA, §§7011, 7035, 7201, and 7202, or revised rules). The cited rules include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In the event of a catastrophic pathogen occurrence, the permittee shall submit to the Department for review, information on the proposed treatment including materials/chemicals to be used, material/chemical toxicity to aquatic life, the mass and concentrations of materials/chemicals as administered, and the concentrations to be expected in the effluent. The Department will address such occurrences through administrative modifications of the permit.

9. AMBIENT DISSOLVED OXYGEN AND TEMPERATURE MONITORING

On June 16, 2006 and July 6, 2006, the Department documented heavy algae growth in Wales Pond Brook, especially in the area immediately surrounding the outfall from Shy Beaver Hatchery and at the dam on the Wales Pond Brook impoundment. Shy Beaver Hatchery is the only known point source discharge to Wales Pond Brook. The previously unregulated discharge from Shy Beaver Hatchery is suspected as a potential source of excess nutrient loading to the receiving water.

Based on the low effluent dilution provided in the receiving water and the need for additional data on the effects of Shy Beaver Hatchery's discharge on water quality, this permitting action requires the permittee to seasonally monitor ambient dissolved oxygen and temperature levels in Wales Pond Brook as specified in Special Condition L of this permit.

10. MACROINVERTEBRATE BIOMONITORING

Macroinvertebrate communities provide indications of the overall ecological health of a receiving water. Based on marcoinvertebrate monitoring data from calendar years 2000-2005 at two locations in Wales Pond Brook, the Department has determined that Wales Pond Brook did not met the aquatic life standard for Class B waters during calendar years 2000, 2002, and 2004. These data were utilized in classifying Wales Pond Brook as an impaired waterbody. The Department has determined that the discharge from the Shy Beaver Hatchery is a potential source for the non-attainment status of the brook.

In order to evaluate attainment of the stream water classification standards and designated uses, resource impacts, and to identify corrective measures when necessary, the Department's Division of Environmental Assessment (DEA) will conduct macroinvertebrate biomonitoring in the receiving water once during the term of this permitting action to determine attainment of the aquatic life standards. In the event that future biomonitoring indicates non-attainment of aquatic life standards in the receiving water, Shy Beaver Hatchery will be required to conduct ambient macroinvertebrate biomonitoring annually thereafter as specified in Special Condition K of this permit. If the receiving water is subsequently determined by the Department to be meeting criteria, standards, and designated uses for its assigned water quality class, the Department will reopen the permit pursuant to Permit Special Condition M, to modify or discontinue the biomonitoring requirement.

11. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of Wales Pond Brook to meet the standards of classification for Class B waters.

12. PUBLIC COMMENTS

Public notice of this application was made in the *Journal Tribune* newspaper on or about February 15, 2001. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

13. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

William F. Hinkel
Division of Water Quality Management
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7659 Fax: (207) 287-3435
e-mail: bill.hinkel@maine.gov

14. RESPONSE TO COMMENTS

During the period of January 18, 2007 through February 16, 2007, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to Shy Beaver Hatchery for the proposed discharge. The Department received significant comments on the proposed draft permit on February 15, 2007, from Bill Ball of Acheron Engineering, Environmental & Geological Consultants (Acheron), on behalf of Shy Beaver Hatchery. The comments are Department responses are summarized below.

Comment #1: Acheron asserts that Wales Pond is not a water of the State. Rather, Acheron asserts Wales Pond is a man-made farm pond completely contained within land owned or controlled by the hatchery and that the Department has no regulatory jurisdiction over man-made farm ponds used for aquaculture.

Response #1: Maine law, 38 M.R.S.A. §361-A subsection 7 defines "waters of the State" as, "any and all surface and subsurface waters that are contained within, flow through, or under or border upon this State or any portion of the State, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State, but not excluding waters

14. RESPONSE TO COMMENTS (cont'd)

susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce."

Wales Pond, so called, is an artificially impounded portion of Wales Pond Brook, a Class B waterway, which is a tributary to the Saco River, a Class A waterway. There is a direct surface water connection between Wales Pond and Wales Pond Brook. The Department has consulted with the Office of the Maine Attorney General (AG) on this matter. On December 1, 2006, the Assistant AG provided (via electronic mail) the following statement regarding Wales Pond and waters of the State:

"The pond is a water of the State in that it is a surface water that drains into and connects with other waters, including, as Ball admits, Wales Pond Brook, the Saco River and ground water. It makes no difference that it is human-made or that the pond itself is contained on Hatchery property."

The Department and AG concur that the impounded portion of Wales Pond Brook, commonly known as Wales Pond, is, in fact, a water of the State through its ground and surface water connections to other waters of the State, namely Wales Pond Brook and the Saco River. Therefore, discharges of pollutants to Wales Pond require a waste discharge license from the Department pursuant to Maine law, 38 M.R.S.A. §413 subsection 1.

Comment #2: Acheron states that they do not agree with the Department's conclusion that the impounded portion of Wales Pond Brook is the headwaters of the Class B stream. Acheron further states that they fail to understand the Department's reasoning behind classifying the farm pond as an impoundment on a Class B stream and subsequently applying Class GPA standards in the development of the phosphorous limit.

Response #2: Maine law, 38 M.R.S.A. §465-A states, "The department shall have one standard for the classification of great ponds and natural lakes and ponds less than 10 acres in size." That is, Class GPA. Maine law, 38 M.R.S.A. §480-B subsection 5 defines "great pond" as "any inland bodies of water which in a natural state have a surface area in excess of 10 acres and any inland bodies of water artificially formed or increased which have a surface area in excess of 30 acres." The impounded portion of Wales Pond Brook, or Wales Pond, is not "in a natural state" and has a surface area of less than 30 acres. Thus, this segment of the stream does not meet the definition of "great pond" and does not fall into the classification of GPA waters. This conclusion is supported in writing by the Assistant AG. Given that the State considers the impoundment a portion of Wales Pond Brook, and that Maine's Water Classification Program at 38 M.R.S.A. §467 states, "all surface waters lying within the boundaries of the State that are in river basins having a drainage area greater than 100 square miles that are not classified as lakes or ponds are classified in this section", the classification for Wales Pond Brook, including the impoundment, is specified at 38 M.R.S.A. §467 subsection 12.B. This subsection specifies that tributaries to the Saco River that are not otherwise classified, which Wales Pond Brook is not, are Class B.

14. RESPONSE TO COMMENTS (cont'd)

The 1/18/07 draft permit was developed to ensure that the discharge from this facility would not cause or contribute to non-attainment of Class B water quality standards, including protection of the impounded portion of the brook. The Department has reconsidered the derivation of the annual maximum mass limit for phosphorous in the draft permit and has concluded that the basis for this limit should not include considerations for changes in trophic state, as is done for Class GPA waters. Therefore, the 2/7/07 revised draft permit eliminates the annual maximum mass limit and establishes seasonal (June 1 – September 30) monthly average concentration and mass limits of 0.074 mg/L and 0.93 lbs./day for total phosphorous as discussed in Section 6 e. of this fact sheet.

Comment #3: Acheron asserts that the testing combined with the macroinvertebrate biomonitoring required by this permit has the potential to drive Shy Beaver Hatchery out of business. In some years, Acheron asserts, the total profits from this operation do not approach the cost of one biomonitoring event. Acheron states that one of its subsidiary companies, Clearwater Laboratory, relies on the trout supplied by Shy Beaver Hatchery to conduct whole effluent testing (WET) required by MEPDES permits, and that if Shy Beaver is forced out of business, Clearwater will lose its most consistent and highest quality supplier of fry-stage brook trout.

Response #3: In consideration of this comment and consistent with the requirements established for other fish hatchery facilities permitted in Maine, this 2/7/07 revised draft permit has modified the 1/18/07 draft permit as follows to relieve some of the financial costs associated with compliance demonstration.

- The requirement to collect 24-hour composite samples (*i.e.*, automated sampler) for BOD_5, TSS, and phosphorous has been changed to allow 8-hour composite samples (*i.e.*, manual collection). See Special Condition A, Footnote #2.
- The Department has modified Special Condition K, *Macroinvertebrate Biomonitoring*, which in the 1/18/07 draft permit required the permittee to conduct annual biomonitoring during each year of the permit, to specify that the Department will conduct at least one biomonitoring event during the five-year effective term of this permit. If however, the Department determines through this effort that Wales Pond Brook does not attain Class B standards for aquatic life, Special Condition K requires the permittee to conduct biomonitoring in subsequent years until such time that this monitoring demonstrates Class B standards are achieved.

With regard to WET test fish, the Department's Division of Water Quality Management has discussed this matter with the Division of Environmental Assessment (DEA), as requested be done by Acheron. DEA has determined that other sources of brook trout for use in WET testing could be utilized or would become available and does not recommend any special provisions in this permit with regard to future availability of brook trout for WET tests.

14. RESPONSE TO COMMENTS (cont'd)

Comment #4: Acheron summarized macroinvertebrate biomonitoring data for Wales Pond Brook for the years 2000-2005 and questioned the Department as to whether it really believes that the wastewater discharged by Shy Beaver could possibly cause the biomonitoring results to vary from non-attainment one year to Class A a few years later (2005 result). Acheron used this argument, in part, to petition for the removal of the macroinvertebrate biomonitoring in the draft permit.

Response #4: The summary provided by Acheron contains a fundamental error. Acheron submits that the 2005 biomonitoring effort results in a determination that Wales Pond Brook achieved Class A water quality standards for aquatic life. In fact, the final determination is non-attainment. The biomonitoring requirement has been modified as discussed above in consideration of the size and financial capability of this facility and not based on results of previous biomonitoring efforts.

Comment #5: Acheron requests the draft permit be modified to delete influent phosphorous testing or reduce the frequency from twice per month to once per month during the months of June through September only.

Response #5: Influent phosphorous monitoring was established to verify an assumption made by the Department in developing the annual maximum total phosphorous effluent limitation. The Department has modified the 1/18/07 draft permit to eliminate the annual maximum phosphorous limit. As such, the 2/7/07 revised draft permit eliminates influent phosphorous monitoring and reporting.

Comment # 6: Acheron requested the Department change the effluent phosphorous testing to the months of June – September only. Acheron requested that the Department change the total phosphorous limit from 52.6 lbs./year to a monthly average of 13.2 lbs./month for the months of June – September only.

Response # 6: The Department has reconsidered phosphorous limits for this facility and concurs that phosphorous discharges to this Class B water are a seasonal concern. Therefore, the 1/18/07 draft permit has been revised to establish seasonal (June 1 – September 30) monthly average mass and concentration limits for total phosphorous using an in-stream concentration threshold of 0.035 mg/L, which has been utilized in developing phosphorous limits for other fish hatchery discharges to Class B streams.

Comment #7: Acheron requested the Department change the effluent orthophosphate testing to ortho-phosphorous testing and change the frequency to once per month during the months of June – September only.

Response #7: Orthophosphate is the compound of interest the Department intended to have Shy Beaver monitor in this permit and is consistent with the phosphorous monitoring requirements/limitations established in other MEPDES permits. Attachment B of this fact sheet is the protocol for orthophosphate sample collection and analysis. Based on the changes to the 1/18/07 draft permit, the 2/7/07 revised draft permit is modifying the orthophosphate monitoring requirement to June 1, 2007 – September 30, 2007 only, but is

14. RESPONSE TO COMMENTS (cont'd)

carrying forward the minimum monitoring frequency requirement of twice per month to generate adequate data to develop a relationship between total phosphorous and orthophosphate.

Comment #8: Acheron requested that the Department modify the 1/18/07 draft permit to eliminate Special Condition L, *Ambient Water Quality Monitoring*, on the basis that the impoundment does not constitute waters of the State.

Response #8: This request was made based on Acheron's assertion that the impounded portion of the brook is not a water of the State. As discussed in this response to comments section above, the impoundment is a water of the State. The Department has, however, eliminated this monitoring requirement as it was original developed for the impounded portion of Wales Pond Brook, which has historically been considered a pond (Class GPA water). The Department has since clarified that the impounded portion of the brook is not a Class GPA water and monitoring requirements typically established for lakes and ponds should not be established for this receiving water. The 2/7/07 revised draft permit requires dissolved oxygen and temperature monitoring within the impounded portion of Wales Pond Brook to assess attainment of Class B standards.

Comment #9: Acheron requested that Special Condition G of the 1/18/07 draft permit, *Schedule of Compliance*, be eliminated stating that the facility will be in compliance with the phosphorous limits recommended by Acheron.

Response #9: The 2/7/07 revised draft permit establishes monthly average limits consistent with the methods utilized in other fish hatchery permits and MEPDES permit. As a result, the 2/7/07 revised draft permit contains effluent total phosphorous limits that are less stringent than the 13.2 lbs./month proposed by Acheron. Therefore, the 2/7/07 revised draft permit eliminates the schedule of compliance as requested.

The Department issued a revised proposed draft permit to Shy Beaver on March 7, 2007, to provide the application with an opportunity to review the changes specified in Responses 1 through 9 above. On March 23, 2007, Acheron submitted the following additional comments on the revised draft permit.

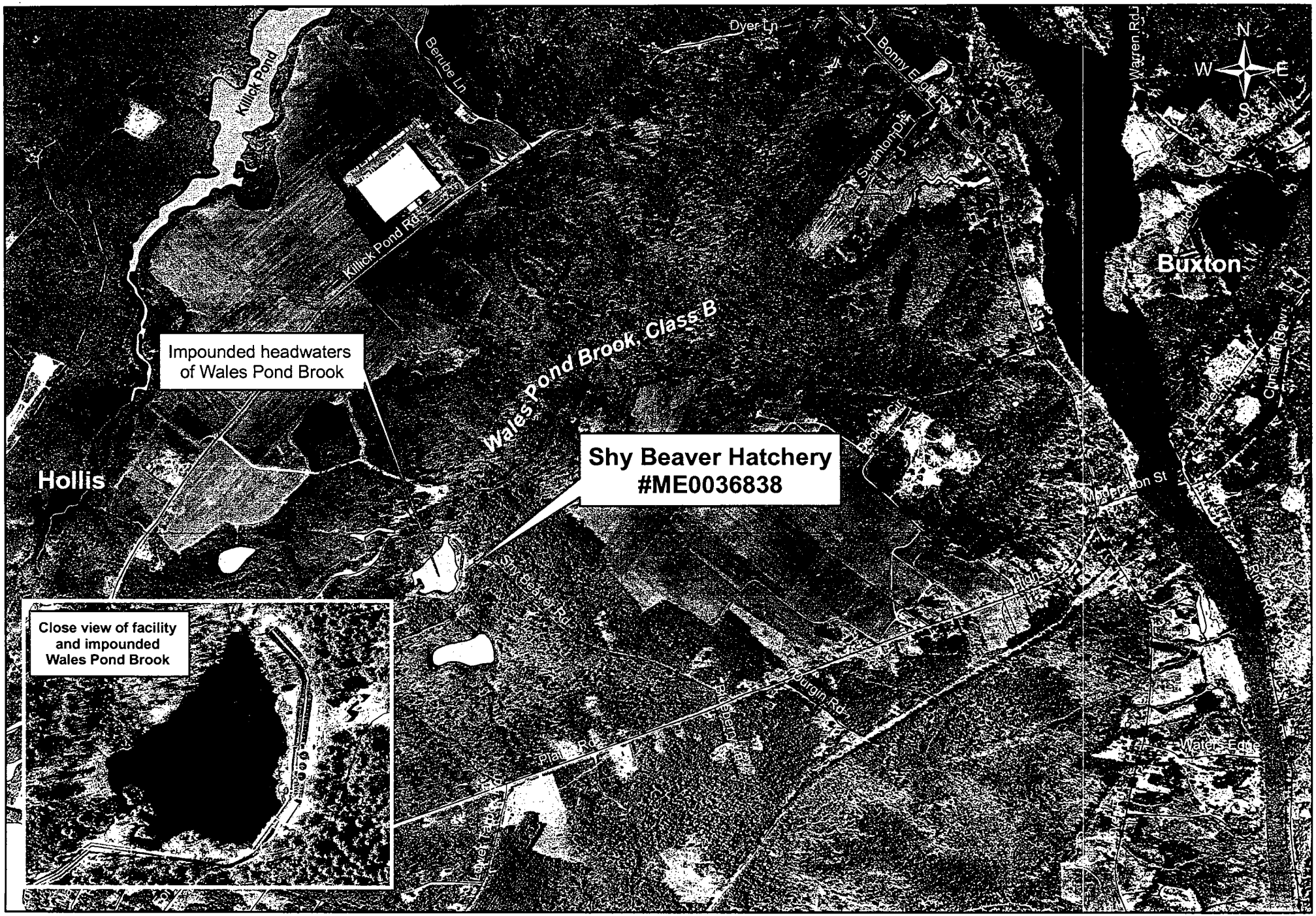
Comment # 10: Acheron stated that the facility takes in water from up-gradient springs and the water passes through the facility. The hatchery does nothing to alter the natural pH of incoming water and there are times when the ambient pH is below 6.0 SU. Acheron requested that the rangle limitation of 6.0 – 8.5 SU be deleted or that some provisions be added to the final permit to account for the natural pH levels.

Response #10: The Department has added footnote # 5 in Special Condition A of the permit to allow for excursions above or below the ambient intake water pH levels.

Comment # 11: Acheron requested that the requirement to report mass of fish on hand be deleted from the final permit stating that the facility does not routinely count and track fish mass on hand and that this would require a great deal of work for this facility which does not have the personnel or equipment necessary to collect this information.

Response#11: The draft permit has been revised to eliminate the fish on hand reporting requirement as the Department has determined this information is not essential for compliance demonstration purposes at this time.

ATTACHMENT A



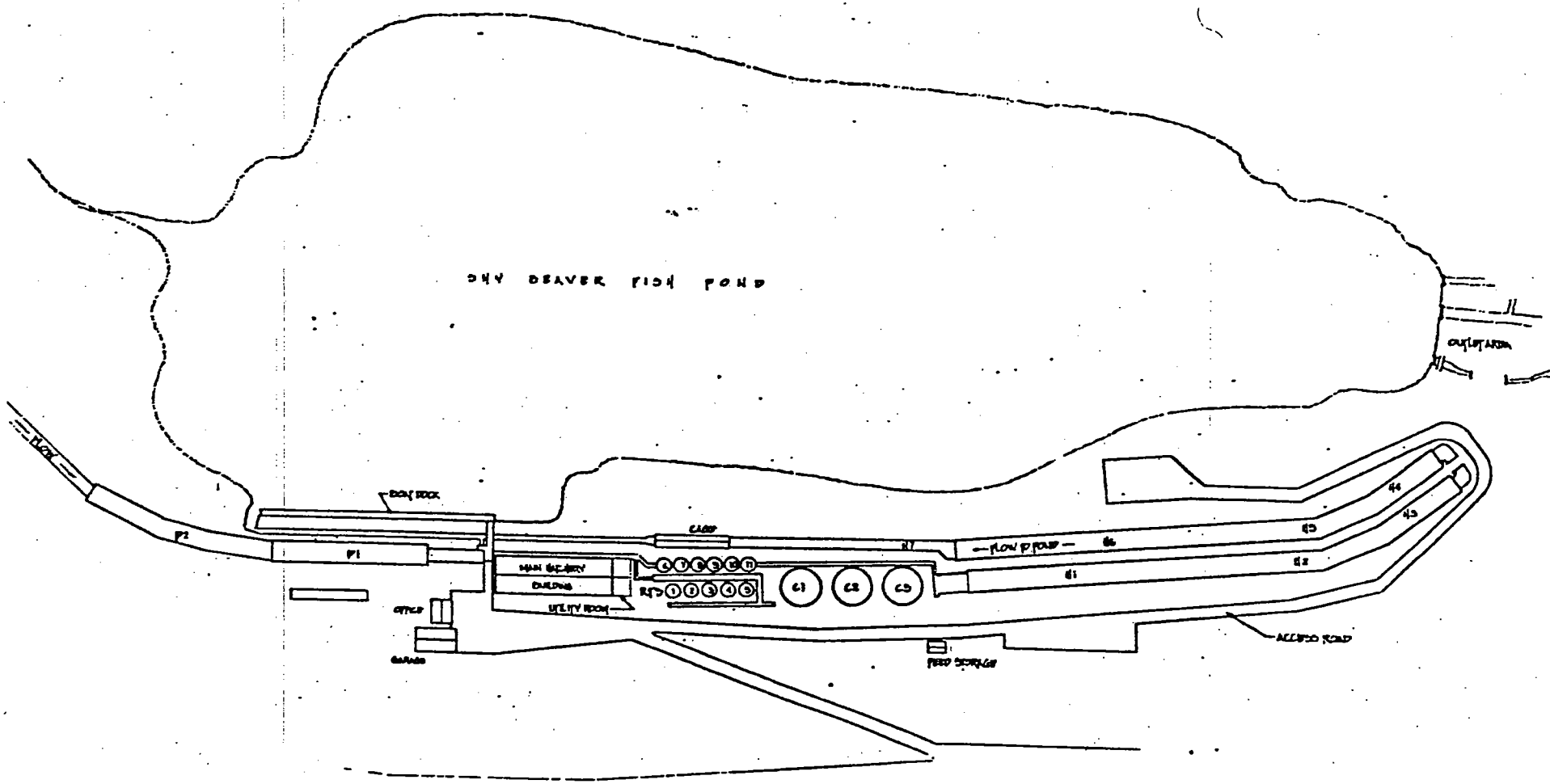
0 0.4 0.8 1.6 Miles

Shy Beaver Hatchery at Hollis, Maine

Map created by Maine DEP
March 7, 2007

ATTACHMENT B

ATTACHMENT 6 , cont



ADIRONDACK	CUSTOMER PIERCE ASSOCIATES, INC.	
	PROJECT DRY BEAVER FISH FARM	DWG. NO. 2105
	SPEC LOT PLAN	SCALE N.T.S.